The Advisor Quality Survey: Good College Advisors are Available, Knowledgeable, and Autonomy Supportive

Kennon M. Sheldon Bryan Garton Rachael Orr Amy Smith

Most US institutions of higher education do not assess advisor quality. We report a scale development effort informed by the developmental prescriptions of self-determination theory (Deci & Ryan, 1985, 2000). The 15-item Missouri Advisor Quality Survey assesses advisor knowledge, advisor availability, and advisor autonomy supportiveness. Across 3 studies the three factors were distinguishable, and each contributed independently to predicting students' global satisfaction with their advisor's performance. Autonomy support was the strongest of the three variables, predicting not only student satisfaction but also the amount of time advisors spend with the student, student cumulative GPA, and student current semester GPA controlling for cumulative GPA.

Given the current economic climate of declining public resources, it is crucial to understand how to teach and graduate college students as efficiently as possible while maintaining quality. Such understanding may require consideration of institutional factors that have received little attention in the past. One such factor, the topic of this article, is the quality of advising that students receive from institutionally designated mentors (Habley, 2003). Although institutions often have policies in place that suggest an institutional commitment to advising, many times the advising received by students is "uneven in quality and ultimately ineffective" (Hossler, Ziskin, & Gross, 2009, p. 8).

Anecdotal and research evidence support the potential importance of good college advising, received from either faculty or professional advisors (Baker & Griffin, 2010). Beggs, Bantham, and Taylor (2008) reported that college advising can have significant influence over major life choices made by students, such as academic major and career direction. Alexitch (2006) asserted that college students seek help from advisors regarding a wide range of issues and topics including not only identifying educational aspirations and career goals but also dealing with academic challenges, making course selections, and meeting institutional requirements. Ender, Winston, and Miller (1982) compared academic advising to the hub of a wheel, stating that an advisor can be the "hub" of a student's college experience from which radiates other developmental experiences, including courses, cocurricular activities, career development, personal counseling, and employment. Berdahl (1995) stated that "students completing a bachelor's degree often report that their initial apprehension upon entering the new world of a university was reduced considerably by the person or persons who helped them get started" (p. 10). Cox and Orehovec (2007)

Kennon M. Sheldon is Professor of Psychological Sciences at the University of Missouri. Bryan Garton is Associate Dean of Academic Programs in the College of Agriculture, Food & Natural Resources and Professor of Agricultural Education at the University of Missouri. Rachael Orr is Assistant Dean and Director of Academic Advising at the University of Missouri. Amy Smith is Assistant Professor of Agricultural Education at the University of Minnesota.

reported that when students engage with advisors, they feel valued and important; one student explained, “You become more than just a number . . . you’re no longer just another one, you’re an individual, you have a name.” (p. 355).

What specific functions do advisors serve? Gordon (1992) identified seven relevant advisor skill areas, including information dissemination, teaching, counseling, mentoring, referral, monitoring, and decision making. Indeed, advisors may also be expected to serve in other capacities based on individual student needs, including “expert, advocate, rubber stamp, judge, teacher, and friend” (H. C. Kramer & Gardner, 1983, p. 18). The Council for Advancement of Standards in Higher Education (2014) also provides several potential standards for what advising programs and advising should include. Cuseo (2002) synthesized these and other roles and responsibilities identified in advising-related literature into four areas: available/accessible, knowledgeable/helpful, personable/approachable, and counselor/mentor.

Given the potential importance of college advising for a host of positive student outcomes, it is striking that most academic institutions in the United States do not assess advising quality, or at least, they do not assess it as rigorously as they assess teaching quality (Hossler et al., 2009; G. L. Kramer, 2003). Without a doubt, evaluation and assessment is key (McGillin, 2003). As Wilbur (2003) noted, “Every strong advising program identified by NACADA or other national organization has integrated an effective system to monitor quality” (p. 214). However, such systems remain scarce. Barriers to such systems include institutional norms (Chickering, 1969), complacency and inertia (Collins, 2001), and the absence of a well-validated instrument for assessing advising (Creamer & Scott, 2000).

In this article, we address the latter barrier, presenting the results of our instrument development efforts at the University of Missouri that were part of a provost-supported initiative to understand and assess quality advising. Our final 15-item scale assesses common-sense factors relevant to good advising, such as advisor availability and advisor knowledge. However, the scale also makes use of concepts from self-determination theory (SDT; Deci & Ryan, 1985, 2000) to assess how well the advisor helps to motivate the student. To what extent does the advisor support the self-determination and internal agency of the student? Such support is critical given the necessarily self-directed process of lifelong education and re-education in which most workers will need to engage to be successful (Sheldon & Biddle, 1998). Advisors can play a crucial front-line role in this developmental process. However, they are not necessarily good at this role; Saving and Keim (1998) found that, although advisors believed they are playing an important developmental role with students, students disagreed strongly with this assessment (see also Stickle, 1982).

According to SDT, “autonomy support” becomes an issue in any unequal power relationship, such as child/parent, worker/boss, athlete/coach, or student/teacher. Authorities are ever tempted to wield their authority in a heavy-handed manner, trying to force subordinates to do what the authority thinks they should do (Sheldon, Williams, & Joiner, 2003). Autonomy-supportive authorities resist this temptation by attempting to engage the self of the subordinate. That is, they take the perspective of the subordinate, provide the subordinate with as much choice as possible in the situation, and supply a meaningful rationale when choice cannot be provided (Black & Deci, 2000). In this way, subordinates are enabled to internalize the prescriptions and advice of the authority, tailoring this information to their own unique needs and situation (Ryan & Deci, 2008). In contrast, controlling authorities impose their will and issue dictates without concern for the subordinate's acceptance of these dictates, use promised incentives or threatened punishments as motivators, use "should" and "ought" language, and do not respect the self-organizational capabilities of the subordinate (Reeve, Ryan, Deci, & Jang, 2008).

Autonomy support is a very broad theoretical construct, but it has been shown to be a crucial communicational skill in a wide variety of applied domains. These include medicine (Williams & Deci, 1996), counseling (Ryan, Lynch, Vansteenkiste, & Deci, 2011), sports (Sheldon & Watson, 2011), parenting (Grolnick & Ryan, 1989), management (Gagne & Deci, 2005), and environmental sustainability (Osbaldiston & Sheldon, 2003). A major purpose of the current article is to apply the autonomy support construct to consider the ideal nature of the advisor/student relationship. Advisors have knowledge, maturity, status, and the power to take positions and make decisions that affect students. Do they wield this power in a preemptory and controlling way, or are they able to make a "connection between equals" with each new student? If they succeed in making such connections, what positive effects might it have on the student?

SCALE DEVELOPMENT METHOD

The initial development of the Advisor Quality Survey (AQS) unfolded over a 2-year period. We anecdotally discuss the first two phases of this process and then present data on the final version of the scale that was tested in phase three of the initial process (titled "Study 1"). We then present data from two further studies employing the final scale to establish the consistency of its factor structure and to demonstrate its correlates.

Initial Scale Development Procedure, Phase 1.

Our goal was to develop a relatively brief instrument of no more than 20 items, given the practical concerns of assessment at our university. Upon review of the literature (Cuseo, 2002; Gordon, 1992; H. C. Kramer & Gardner, 1983) and previously established instruments relevant to academic and faculty advising, the initial advisor instrument was designed (Mounce-Smith, 2008). Existing university and college evaluations and the 36-item Survey of Academic Advising (SAA) created by the ACT organization provided a starting point for item generation. From this review, a large number of potentially desirable advising characteristics and descriptors were identified.

The initial list of statements was then presented to a panel of four faculty advisors within the university, convened to provide guidance to the study. The faculty advisors first worked individually, then collaboratively, to clarify ambiguous statements and eliminate duplication. This process yielded approximately 40 items, which were then submitted to a larger panel of experts for feedback. This panel of 11 experts consisted of faculty members, college administrators, and instrumentation experts from across the nation. Once again, the statements were modified and revised according to the feedback received; ultimately 34 preliminary items were identified that were thought to assess relevant advising constructs.

Initial Scale Development Procedure, Phase 2

Researchers then e-mailed a survey request, containing the link to the 34 item instrument, to 1,622 students within the College of Agriculture, Food and Natural Resources. We received 730 complete responses. Students were asked to rate their own assigned advisor using a 5-point Likert-type scale with the following possible responses: 1 (*poor*), 2 (*fair*), 3 (*satisfactory*), 4 (*good*), 5 (*excellent*). An exploratory principal components analysis of the obtained data revealed two primary factors. We labeled these factors "Knowledgeable" (e.g., suggests academic resources, helps me obtain employment, provides information on study skills) and "Helpful." However, conceptual analysis of the items in the Helpful factor suggested that helpfulness can be logically divided into two facets: one concerning mere "availability" (e.g., advisor is on time, is available when I need assistance) and another concerning psychological "mentoring" (e.g., advisor encourages me to assume an active role in planning my program, encourages academic success). Distinguishing between these two facets of helpfulness would align our project with Cuseo's (2002) conceptual analysis suggesting that good advising involves availability and counseling/mentoring, as well as knowledgeability.

Thus, we concluded that knowledgeable, available, and mentoring constructs are likely the three most important facets of quality advising and should guide our subsequent scale construction efforts. However, in thinking further about the mentoring items used in Phase 2, we realized the relevance of SDT's concept of autonomy support (Deci & Ryan, 1987), given that three of the mentoring items ("respects my decisions," "encourages academic success," and "encourages me to assume an active role in planning my degree") directly reflect Deci and Ryan's (1987) definition of autonomy support, as described in the introduction (e.g., supporting active engagement, conveying respect for the student, encouraging strivings for success). Notably, SDT has not been heretofore applied in considering college advising. For our subsequent efforts we chose to employ the theoretically grounded concept of autonomy support to represent, and sharpen the assessment of, the mentoring facet of advising. Our main purpose in the three studies below was to test the proposed three-factor structure and to compare the factors as predictors of student satisfaction and other outcomes.

STUDY 1

In Phase 3 (Study (1), we tested a concise, 15-item version of the scale. The scale was created by retaining the five best "knowledgeable" and "availability" items from Phase 2 (e.g., the items with the highest loadings on their own factor and the lowest loadings on other factors). Only three of the preliminary items loaded exclusively on the autonomy support factor, which is understandable given that we did not originally target this construct. Thus we added two additional autonomy support items to the scale. These additional items ("provides me with choices and options" and "seems to understand my perspective") were adapted from the Learning Climate Questionnaire (Black & Deci, 2000), a widely used instrument.

Method

Study 1 data were collected at the University of Missouri, a large, public, land-grant institution with an undergraduate enrollment of approximately 30,000. The data were gathered using an on-line questionnaire administered to undergraduate students from the College of Education; the College of Agriculture, Food and Natural Resources; and the School of Journalism, concerning their own academic advisor. Advisors included both faculty advisors and professional advisors; in either case, students were encouraged to meet face-to-face with their advisor at least once a semester and more often depending on necessity or their own requests. Each of the three units sent the survey link to their student listservs with a request to complete the survey. Of the approximately 5,000 students enrolled in the three units, a total of 527 students completed the questionnaire: 243 from Agriculture, Food and Natural Resources, 113 from Education, and 171 from Journalism. This responding sample consisted of 125 men and 400 women (two participants did not report gender), with a breakdown of 115 freshmen, 113 sophomores, 141 juniors, and 156 seniors (two participants were missing academic level). Regarding ethnicity, 92.6% of the sample was Caucasian. Of the advisors rated, 242 were faculty members and 282 were professional advisors (three participants were missing advisor-type).

In addition to rating the 15 specific items, participants were also asked to rate their overall satisfaction with their advisor, using the items "overall, my advisor has been excellent" and "I would recommend this advisor to a friend" [the items were presented with response choices on a 5-point scale ranging from 1 (*no agreement*) to 3 (*some agreement*) to 5 (*much agreement*); student responses to these two items were averaged]. These are two primary items used to assess overall teaching quality at the university and items that have demonstrated excellent reliability and validity over the years. We also reasoned that using the same questions for advisors as for teachers might facilitate comparisons across the two groups (no such comparisons were conducted in the current studies). If our analysis of the 15 items revealed three separate factors, as expected, we intended to predict global advisor satisfaction from the

TABLE 1.

Study 1: Descriptive Statistics for the 15 Items

Item	*M*	*SD*
Knowledgeable		
1. Provides information about using on-line resources	3.41	1.24
2. Provides information regarding study skills	3.02	1.36
3. Suggests academic resources (student success center, writing lab)	3.29	1.37
4. Refers me to the appropriate campus office to obtain financial assistance	3.51	1.28
5. Helps obtain employment on campus (e.g., work study, assistantships)	3.16	1.43
Available		
6. Is on time for advising appointments with me	3.83	1.24
7. Provides sufficient time for advising appointments	3.74	1.33
8. Maintains an open line of communication	4.03	1.21
9. Available when I need assistance	4.19	1.09
10. Responds to my requests in a timely fashion (e.g., e-mail, phone calls)	4.09	1.09
Autonomy Supportive		
11. Respects my decisions	4.06	1.11
12. Encourages academic success	4.08	1.17
13. Provides me with choices and options	3.69	1.38
14. Encourages me to assume an active role in planning my degree	3.96	1.24
15. Seems to understand my perspective	3.80	1.32

TABLE 2.

Study 2: Results from Confirmatory Factor Analysis with Factor Loadings on 15 Items Based Upon Designated Latent Factors

Item	Knowledgeable	Available	Supportive
Provides information about using on–line resources	**.84**	.07	.02
Provides information regarding study skills	**.89**	.07	.02
Suggests academic resources (success center, writing lab)	**.88**	–.07	–.18
Refers me to the appropriate office for financial assistance	**.86**	.07	–.17
Helps obtain employment on campus	**.86**	.06	–.07
Is on time for advising appointments with me	.25	**.72**	.06
Provides sufficient time for advising appointments	.33	**.86**	–.13
Maintains an open line of communication	.15	**.91**	.05
Available when I need assistance	–.14	**.87**	–.15
Responds to my requests in a timely fashion (e.g., e-mail, phone calls)	.00	**.85**	–.34
Respects my decisions.	–.10	.18	**.83**
Encourages academic success.	.04	.04	**.87**
Provides me with choices and options.	.19	–.03	**.93**
Encourages me to assume an active role in planning my degree.	.09	–.05	**.90**
Seems to understand my perspective.	.09	.01	**.95**

three factors. We hoped to assess which factor, if any, is most important. Are students most influenced by an advisor's knowledge, by his or her availability, or by his or her support of the student's personal autonomy?

Results

The 15 items along with descriptive statistics are presented in Table 1. As can be seen, the mean scores for the items ranged from 3.02 to 4.19. Because these means are all above the scale mid-point, it appears that students were satisfied with their advising, overall. Still, scores for the "knowledgeable" items were somewhat lower than scores for the "available" and "supportive" items.

The 15 items were next subjected to a confirmatory factor analysis (CFA), which specified latent Available, Knowledgeable, and Supportive factors. We used LISREL 8.8 (Jöreskog & Sörbom, 1993) for the analysis. The model yielded a good fit to the data, with a normed fit index (NFI; Tanaka, 1987) of .99 and a comparative fit index (CFI; Bentler, 1990) of .99, where good fit is typically indicated for values greater than .95 (Hu & Bentler, 1998). The model also yielded a root mean residual (RMR) of .026, where good fit is typically indicated for RMR less than .05 (McDonald & Ho, 2002). The 15 items are presented again in Table 2, showing their loadings on their specified factor as well as their negligible cross-loadings on the other factors.

To provide further evidence that a three-factor model provides the best fit to the data, we conducted an alternative analysis specifying just one latent factor. In this analysis NFI and CFI were each .95 and RMR was .063, considerably worse than the three-factor model. Comparison of the two models using the Akaike information criterion (AIC) also supported the three-factor model, as the AIC for the three-factor model was 880, compared to 2,839 for the one-factor model (lower AIC scores are preferred, indicating that less information is lost by the specified model; Burnham & Anderson, 2002).

Based on these analyses, subscale scores, named Knowledgeable, Available, and Supportive, were created for each student by averaging the five items from each factor. A correlation of $r = .78$ was found between Knowledgeable and Available, and a correlation of $r = .83$ was found between Knowledgeable and Supportive. Available and Supportive were also correlated, at $r = .83$ ($p < .001$ for all). Obviously, there were very high intercorrelations between the three constructs, despite their distinguishability in the CFA and the superiority of a three-factor to a one-factor model. The high correlations suggest that, for some purposes, the three scores could be combined into a single "Advisor Quality" score.

To provide further evidence that all three constructs are important despite their substantial overlap, the overall advisor satisfaction variable was regressed on the three subscale scores together. All three subscales were significant and positive in this analysis, with β coefficients of .18, .19, and .59 for Knowledgeable, Available, and Supportive, respectively ($p < .01$ for all). Thus, the strongest determinant of students' ratings of overall satisfaction was the advisor's autonomy supportiveness. However, an advisor's availability and knowledge also play a significant role in these judgments, indicating that all three types of information are needed for the best prediction of global satisfaction with the advisor.

Finally, we examined mean differences on the three subscales, using the between-subjects factors of gender, ethnicity, year in school, advisor type (faculty or professional), and college/school (Agriculture, Education, or Journalism). Because these analyses were exploratory, we conservatively required evidence of an omnibus main effect of a factor upon the three subscales before interpreting particular subscale differences. No omnibus effects were observed for year in school, gender, or ethnicity, although the non-White sample of only 39 limited power for the latter comparison, $p > .10$ for all. There was a significant omnibus difference between the three colleges/school, $F(6, 1{,}046) = 8.59$, $d = .44$, $p < .01$: follow-up analyses indicated that the advisors for one of the three colleges, which shall remain unnamed, were rated significantly lower than were advisors for the other two colleges on all three subscales (mean differences between this college/school and the other two ranging from .41 to .74; $p < .01$ for all). There was also a significant omnibus difference between faculty advisors and professional advisors, $F(3, 520) = 8.43$, $d = .44$, $p < .01$, which resulted from faculty advisors receiving significantly higher ratings on all three subscales, d value of .39, .41, and .37 for Knowledgeable, Available, and Supportive, respectively; $p < .01$ for all. This difference was unexpected, as the advising context and function were putatively the same for both types of advisor. The three colleges/school differed on their relative employment of professional versus faculty advisors, which partially explained the differences in advisor ratings observed among the three colleges/school. See Self (2008) for a detailed discussion of the possible differences between these two types of advisors, both in how they perform the job and in how they are perceived by students.

STUDY 2

Method

In Study 2, we administered the 15 items to a sample of recent graduates of the same university. Although this sample was truncated because it excluded former students who did not graduate, we believed it important to consider the retrospective impressions of those who had completed the university process. We sought to again confirm the three-factor structure and to again show that all three factors are important for predicting global advisor satisfaction, which was measured by the same two items as before. A total of 1,077 December 2011 graduates, drawn from all colleges within the university, were e-mailed a request to participate in the survey via an enclosed link; 216 graduates completed the survey.

Results

As in Study 1, the item means were high, ranging from 3.46 to 4.47. Also, the Knowledgeable items again were rated less highly, on average, than were the Available and Supportive items. We conducted the same CFA on the data as in Study 1, seeking the hypothesized three-factor structure. This structure was again in evidence, with all items loading .87 or above on the specified factor and with model fit statistics of .97 each for NFI and CFI and a root mean residual (RMR) of.044. We again tested an alternative one-factor model, which yielded poorer fit statistics of NFI = .94, CFI = .95, and RMR = .057. Also, the AIC for this model was 1,180, compared to 508 for the three-factor model, again supporting the three-factor model.

We again computed three subscale scores, which again were highly correlated at the zero-order level, with r values ranging from .83 to .94. This again suggests that the three subscales might be combined into a single Advisor Quality score for some purposes. To assess whether the three subscales could independently predict global advisor satisfaction, despite their high degree of overlap, we regressed global satisfaction simultaneously on the three scores. As in Study 1, Supportive had the highest coefficient ($\beta = .57$, $p < .01$), followed by Knowledgeable ($\beta = .22$, $p < .01$) and Available ($\beta = .15$, $p = .10$). Although the coefficient for Available did not reach significance, it is of approximately the same magnitude as was found in Study 1; the discrepancy can be explained by the much smaller sample size in Study 2. Thus, these data again suggest that all three types of information are required to predict overall assessments of advisors, although autonomy support was again most important.

STUDY 3

In Study 3, we administered the instrument to a large sample of current students, this time from nine different schools and colleges within the university. We hoped to again confirm the three-factor structure and, also, to extend the validity evidence for the scale by using it to predict additional outcomes besides global advisor ratings. Specifically, we assessed how many meetings students had with their advisor in the last year and how much time they spent at those meetings. Presumably, if the advisor is doing a good job, the student will be more motivated to meet and spend time with him or her. In addition, we were able to get objective registrar data concerning student's cumulative GPA and student's GPA for the semester in which the survey was administered. Presumably, higher functioning advisors help to produce higher functioning students. Based on Study 1 and Study 2 findings, we predicted that advisor's Autonomy Support would have the strongest association with these outcomes.

Method

In April 2011, the survey link and a request to complete the survey was e-mailed to all currently enrolled students in the Colleges of Agriculture, Food and Natural Resources; Arts and Science; Engineering; Education; and Business; and the Schools of Nursing; Health Professions; and Journalism (24,901 students in all). The consent form included a request to allow us access to the student's academic records. Of these, 1,632 students began the survey. However, not all participants completed the survey. Also, a "not applicable" option was supplied for the 15 advisor survey questions, which unfortunately, many students used for one or more responses, creating interpretational difficulties. We decided to eliminate all students with any missing data and, also, all students who used the not applicable option at any time. This resulted in a final sample of 818. Analyses comparing the 818 students with completely "clean" data to the 524 students who used the not applicable option at least once showed that the two groups did not differ in their gender composition or their college membership. The final sample of 818 consisted of 306 men and 512 women; 678 were Caucasian (White) and 140 were non-Caucasian (non-White). In addition to administering the 15 AQS questions and the two global satisfaction questions, we also asked participants to indicate how many times they had met with the advisor that year (never, once, twice, three times, four or more times) and, on average, how much time they had spent in each meeting with the advisor (1–5 minutes, 6–15 minutes, 16–30 minutes, 31–45 minutes, more than 45 minutes). After the data were collected, they were linked with registrar data in order to supply information on current semester GPA and cumulative GPA.

Results

Means for the 15 items ranged from 3.92 to 4.68, with the Knowledgeable scale item means again being somewhat lower than the means for the other items. We conducted the same CFA on the data as in Studies 1 and 2, seeking the hypothesized three-factor structure. This structure was again in evidence, with all items loading .75 or above on the specified factor and with model fit statistics of .98 and .98 for NFI and CFI and with a root mean residual of.036.

Once again we conducted an alternative analysis specifying just one latent factor. In this analysis NFI and CFI were .96 and RMR was .049. Also, AIC was 587 for the three-factor model compared to 1,500 for the one factor model, again supporting the three-factor model. In addition, we computed three subscale scores, which were highly correlated at the zero-order level, with *r* values ranging from .77 to .90. This again suggests that the three subscales could be combined into a single Advisor Quality score.

To assess whether the three subscales could independently predict global advisor satisfaction, we regressed global satisfaction simultaneously on the three subscales. As in Studies 1 and 2, Supportive had the highest coefficient ($\beta = .50$, $p < .01$), followed by Available ($\beta = .27$, $p < .01$) and Knowledgeable ($\beta = .19$, $p < .01$). Thus, these data again suggest that all three types of information are required to predict overall assessments of advisors but that autonomy support is the most important factor.

To test whether perceived advisor quality predicts greater usage of the advising resource, we entered the three AQS subscale scores into regressions predicting the reported number of meetings with the advisor and the reported amount of time (on average) spent at those meetings. Advisor's Knowledgeableness predicted reported number of meetings ($\beta = .18$, $p < .01$). Advisor's Availability and advisor's Supportiveness were not significant. However, advisor's Supportiveness was the strongest predictor of the reported amount of time spent in meetings ($\beta = .17, p < .05$), and Knowledgeable was also significant ($\beta = .13, p < .05$). For the reader's information, supplementary analyses showed that both the number of meetings and the time spent in average meetings significantly predicted global advisor satisfaction, as would be expected. Our primary focus here, however, was on the AQS subscales as predictors.

Next, we predicted students' GPA during the semester in which the survey was given, using the three AQS subscales. In this analysis Supportive was positive and significant ($\beta = .31, p < .01$). Interestingly, Available was negatively related to semester GPA ($\beta = -.16, p < .05$), perhaps indicating that struggling students make more use of their advising resource. Advisor's Knowledgeability was unrelated to semester GPA. We then predicted student's cumulative GPA from the three subscales. Advisor Supportiveness was significant in this analysis ($\beta = .25, p < .01$); unexpectedly, advisor Knowledgeability was negatively associated with cumulative GPA ($\beta = -.11, p < .05$), perhaps indicating that high-performing students are sensitive to gaps in the advisor's knowledge or that low-performing students have seen more evidence of advisor's knowledge. Finally, we predicted student's semester GPA while also including student's cumulative GPA in the analysis. Cumulative GPA provides a reasonable measure of academic aptitude, and controlling for this variable thus removes a potential confound in the results. As expected, cumulative GPA predicted semester GPA ($\beta = .77, p < .01$), indicating that current performance is highly associated with past performance. More importantly, Supportive remained significant in this analysis ($\beta = .12, p < .05$), suggesting that this advisor characteristic is independent of student academic aptitude. Advisor's Availability became only marginally significant in this analysis ($\beta = -.10, p = .06$).

Finally, we again explored mean differences in the three subscales as a function of gender, ethnicity, college, and academic level. As in Study 1, no significant omnibus effect emerged for academic level (freshman, sophomore, junior, senior) or for gender, male, female, $p > .10$ for all. Some significant differences again emerged as a function of in which of the nine colleges/schools the student was enrolled, $F(24, 2{,}409) = 2.73$, $d = .33$, $p < .01$, although we do not report or interpret the complex pattern of means here. In addition, a significant difference emerged as a function of ethnicity, White/non-White; $F(3, 808) = 4.19$, $d = .25$, $p < .05$. Compared to the 674 Whites, the 138 non-Whites rated their advisors as less knowledgeable ($d = .19$), less available ($d = .29$), and less autonomy supportive ($d = .33$).

GENERAL DISCUSSION

In this article we have described the scale development process for the AQS, showing that the final 15-item scale assesses three distinct facets of quality advising: the advisor's knowledgeability, his or her availability, and his or her autonomy supportiveness. This three-factor structure was confirmed in three different samples, comprising students from every college/school within the university and students of a wide range of ages and educational experiences, and also including recent graduates of the university. The fact that the AQS is shorter than past advising instruments (i.e., 15 items instead of the 36 items of the SAA) is a positive feature of the instrument, as is the fact that it builds upon prior conceptual analyses in the advising literature (Cuseo, 2003) while also tying this literature to a prominent theory of motivation, namely, the SDT (Deci & Ryan, 1985, 2000).

Validation analyses showed that all three subscales independently predicted student ratings of global satisfaction with the advisor, meaning that each scale supplies unique information that the other two scales do not, despite their high intercorrelation. However, consistent with the tenets of SDT (Deci & Ryan, 1985, 2000), advisor autonomy support was the strongest predictor of global advisor satisfaction. Advisor autonomy support also was the strongest predictor of student performance, as measured by registrar-supplied data on cumulative GPA and current semester GPA. Furthermore, advisor autonomy support predicted current semester GPA controlling for cumulative GPA, indicating that the association between advisor quality and student performance is not just due to student differences in general academic achievement or aptitude. Finally, advisor autonomy support was associated with a greater quantity of time spent by the advisor with the student during meetings, consistent with SDT's proposal that an autonomy supportive mode of interacting with others may sometimes take more time to enact (Sheldon et al., 2003). In the current case, this time appears to be well spent.

The importance of advisor autonomy support underscores the need to consider not just what the advisor knows and whether the student can access this knowledge but also how well the advisor can mentor the student and help the student to activate his or her own internal resources. Although such interpersonal mentoring skills are subtle and can be difficult to pinpoint, SDT provides a well-articulated and well-validated theoretical framework for the task. Stated in terms of the actual items within the Supportive subscale, the highest quality advising involves according students respect, acknowledging their unique perspectives, providing them with choices rather than pressuring them with demands and "shoulds," and encouraging their active involvement in the educational process (Reeve et al., 2007). We believe that our results provide new confirmation for SDT while at the same time providing advisors and administrators a solid tool for evaluating advising quality. Notably, the AQS can be scored by computing three subscales separately, as was done in this research. However, the high correlations among the subscales indicate that the AQS could also supply a single overall advising quality measure, derived by averaging the subscales. Either approach is reasonable, depending on the researcher's or institution's purposes.

Several other findings are worthy of discussion. First, we found significant differences in advising quality between different colleges/schools within the university. This was accounted for in part by the fact that some colleges/schools relied more on professional advisors and others on faculty advisors. Unexpectedly, faculty advisors received higher scores on all three subscales. Although this effect remains to be replicated and further explored, we suggest it may reflect the importance of having a quality relationship with a faculty member, as noted in the introduction (Cox & Orehovec, 2007). Receiving the mentoring attention and interest of a professor (or failing to do so) may be more impactful, in a student's mind, than receiving such attention from a nonprofessor (Self, 2008). It is also possible that professional advisors are stretched thinner or have a larger advisee load than do faculty advisors, although we could not evaluate this possibility with the current data. An additional finding of interest, from Study 3, was that minorities within the university community perceived their advisor as less knowledgeable, available, and supportive than did majorities. There are many possible explanations for this rather small (though significant) difference, including both possible perceptual biases among minority participants and possible racial biases among advisors in their treatment of minority students. Unfortunately, we cannot distinguish between these possibilities with the current data.

Other study limitations include the fact that we employed only student ratings of advisors. It would also be possible to use the AQS with other sources, such as advisor's own self-ratings or ratings of the advisor made by support or supervisory staff who observe advising sessions. Also, to date, the AQS has been employed at only one university within the American Midwest region; further studies are necessary to establish its generalizability to other regions or types of schools within the United States and to schools outside of the United States. Another limitation is that response rates to the solicitations sent out were fairly low, raising the question of whether self-selection influenced the results. It would be useful to collect data from student populations that are incentivized or even paid to complete the survey. Finally, it would be useful to study other types of outcomes of good advising, including the students' objective knowledge of university policies and requirements (which should be predicted by advisor knowledgeability) or students' ability to obtain satisfactory employment upon graduation (which might be predicted by any of the three subscales).

In conclusion, we hope that readers will find the AQS to be a useful tool for their own work—both as researchers seeking to explore theoretical questions and as administrators seeking to assess advising quality. For the latter purpose, the AQS might help administrators to pinpoint areas that may be improved by particular advisors, departments, or colleges as well as pinpointing areas in which these entities are already quite skilled.

Correspondence concerning this article should be addresssed to Bryan Garton, 2–64 Agriculture Building, University of Missouri, Columbia MO 65203; gartonb@missouri.edu

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